MYRMECIA

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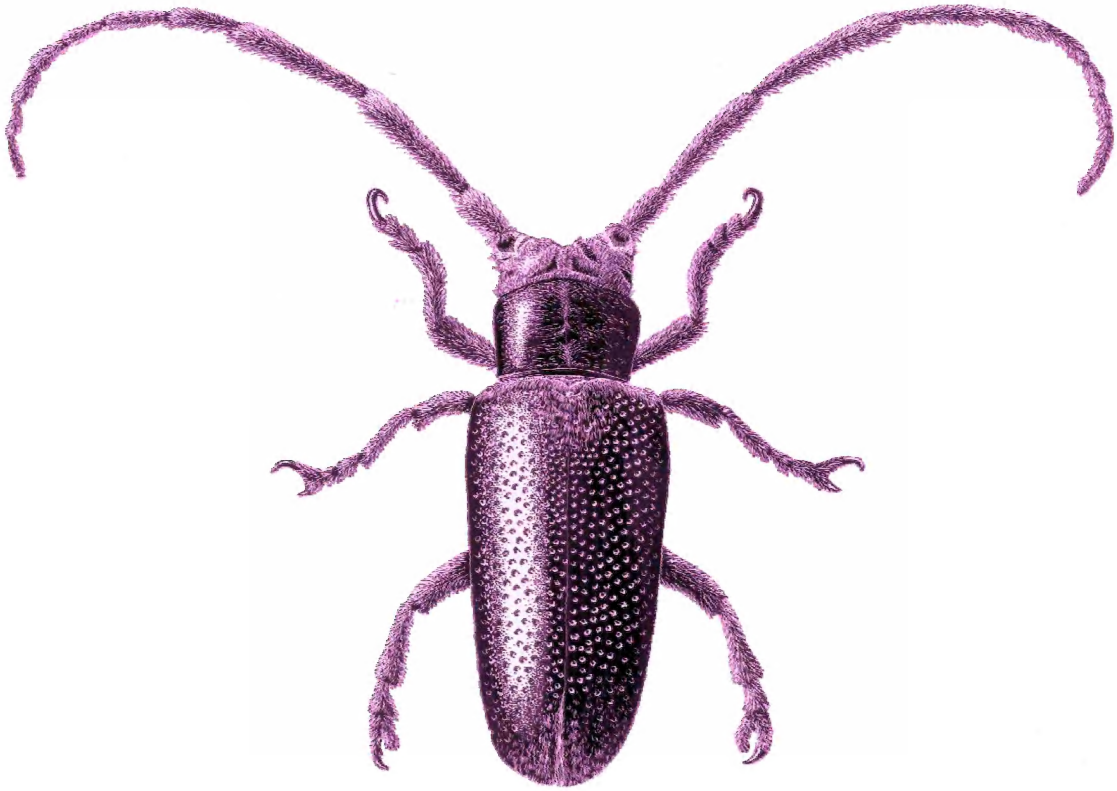

The cover for this year's *Myrmecia* features an illustration of a Cerambycid beetle by Meaghan Meredith, University of Newcastle. Meaghan's drawing was Highly Commended in the Student Section of the 2008 AES Illustration

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NOTICE

Statements made in *Myrmecia* do not necessarily represent the views of the Australian Entomological Society.

ANNUAL REPORTS FOR 2009

TREASURER'S REPORT

The membership subscription invoices for the 2009-10 financial year were emailed to 478 Society members on 16 June 2009 and 22 were dispatched by conventional mail on the same date. The majority of subscriptions have been paid by credit card, but when card numbers are quoted incorrectly the Treasurer's work load is increased significantly.

To date only about 50% of members have paid their subscription and it is planned to send follow-up invoices in early October to those who have not yet paid. I would be grateful if members could attend to their subscriptions promptly. Managing the long tail of lagging subscriptions is very time consuming.

On 31 August the Society's Commonwealth bank account balance was $69,560, and deposits amounting to ca $2,462 remain to be banked. The Society has two fixed term deposits with the Commonwealth Bank which amount to $184,242. The net surplus for the year ended 30 June 2009 is $20,499, and the total assets of the society are $252,701, up from $235,377 last year.

The audit of the Society's 2008/9 FY finances was completed by Anthony Curtis & Co – Chartered Accountants at the end of September 2009. A copy of the report is available from me if required.

In early 2009 the Society's finances were shifted from a traditional journal based book-keeping system to an accounting package known as MYOB. This has caused some problems but almost all have now been overcome. In the future the use of this software will significantly enhance the Society's recording and reporting capability.

Gordon HOOPER
Treasurer

NEWS BULLETIN EDITOR'S REPORT

MYRMECIA

I took over the editor's role mid last year from the capable hands of Aaron Simmons. The change went well, though there have been a few teething problems such as putting in an old article in my very first issue in 2008, to the box for the second issue for 2009 getting lost somewhere between Perth and Melbourne (where the AES journal is sent from). I apologise to members who have sent in information which I have accidentally left out. I wish I could say it will never happen again…

In the past, the compilation of Myrmecia was undertaken two months before the date on the cover, so that Myrmecia could be distributed with the AJE. This made it difficult to include the most up-to-date information from members, especially around the Christmas/New Year period. This year, I have been trying to ensure that the lag time between compilation and publishing is shorter.

Finally, I am grateful for the contributions to Myrmecia by members during the past twelve months. I encourage people to continue submitting their information. I also encourage members to contribute to new sections 'Entomology in the News' and 'Useful Web-Sites'. Myrmecia exists solely for AES members and without continued input, Myrmecia would not exist.

Sonya BROUGHTON
Myrmecia Editor

PRESIDENT'S REPORT

I should say up front that the views expressed in these think pieces in no way represent any official society position. They do of course represent the views of a society official (subtle distinction) that will hopefully not be invited back. If they offend I apologise. If they engender some mirth or debate, well and good.

The Australian Entomological Society 40th AGM and scientific conference in Darwin was, I believe, a success. Well I thought it was, because I learnt something, which is my yardstick for any meetings and I presume exactly what one should expect from a meeting (apart from the 'social interactions' over a drink or networking I think it is called these days). The intense few days of talks is like attending a whole semester of courses in one hit. The gathering in Darwin was bigger than most recent AES meets because we combined with 2 other cognate group meetings, the Society of Australian Systematic Biologists and the 9th Invertebrate Biodiversity & Conservation Conference. In addition, the conference organising committee invited some vertebrate type folks that made for more interesting talks and discussions over tea (wine). The organisers are to be congratulated on having a full day of plenary speakers, followed by concurrent sessions and the usual insects I have known, loved and killed.

So what stuck in my mind (before I have a seniors moment and forget)?

There is the brave new world of taxonomy (sorry, "species discovery") and biodiversity blitzes, with automated recognition and sorting of samples and perhaps even species descriptions at the push of a button. So the tools are being developed to perhaps break the back of the TI (jargon for the Taxonomic impediment of not being able to identify so many species) before they all go extinct anyway. I guess the remaining impediment of actually databasing the existing collections will not be a problem in the future. Once most things are extinct there will be less to do, but at least PD (phylogenetic diversity) will be conserved; we can take our time describing the dead pinned specimens or just flick through the image libraries and their linked DNA barcodes, or since it is getting so cheap perhaps complete sequences. Still if even half of these existing developments come to pass ecologists, biogeographers, evolutionary biologists and 'biosecurity' types, as well as those into taxonomy and systematics, will have a wealth of information to play with.

Of course all those linked databases of images, barcodes, fact sheets and keys will need to be maintained, just like those pesky mausoleums to diversity called collections? I am reminded of

university telephone directories that are meant to "direct" one to the correct contact number. Of course they are almost invariably out of date and misleading because there are not enough resources to maintain them, just like the problem of databasing all the existing collections. I wonder what the replacement fad, process, whatever will be?

Perhaps the most depressing, was the talk on small mammal extinctions and a bat on Christmas Island; we essentially watched as they disappear. And that is even with the best policies, processes and procedures enshrined in legislation and overseen by no doubt zealous public servants in the world! All the right committees no doubt met and oversaw the extinction. So the process is correct. Bugger the outcome.

Is a species centric approach to conservation flawed? But then it does salve our collective conscience if we at least try to conserve some cute furry, feathery, scaly or slimy.

The AGM highlighted the need to engage non-members to join the society and retain these. I would still like to hear why so many folk in our universities and premier research establishments, who work on insects, usually as model systems, on very interesting questions, are not members. The annual meetings offer a one stop shop where you can access not only taxonomists and systematists, but also physiologists, behaviour types, developmental biologists, ecologists, population geneticists amongst others (if I have missed your bent in life forgive me). I always have gained from speaking to folk outside my areas of immediate interest. I would urge all member of the society to engage in conversations with non-members and work on the road to Damascus conversion.

In the long term if the society is to prosper (and apparently one of its aims is to make money! We must revisit that), then we need to engage with postgraduate students much more. To that end, the executive will be looking at a postgraduate representative as well as more relevant activities for postgraduates at the conference.

Next years meeting will be in the west, at the Vines just outside Perth. If Darwin is anything to go by, it should be a great meet.

Myron ZALUCKI
President

VICE PRESIDENT'S REPORT

This is my first report to the Annual General Meeting of the Society as Vice President. The past year has passed very quickly with the steep learning curve as the new Executive grew into their roles. I am very grateful to Alice Wells for her tireless and careful work as Honorary Secretary, Gordon Hooper as Honorary Treasurer, Jane Wright as Public Officer and Stephen Cameron as Honorary Memberships Secretary. Jane Wright has also attended most Executive meetings as Public and Privacy Officer, and has helped us on a number of issues, especially to do with our privacy policy. We have also relied heavily on the past Executive, so thanks particularly to Graham Thwaite, Murray Fletcher and Geoff Gurr for their help and time in advising the new Executive. The new core Executive had 11 meetings since the 39th AGM in Orange, in all months except December.

One of the major challenges to the Society over the next 4 years is to stabilise and increase our membership. Since a high of just over 600 in 2004, our member numbers have slowly declined due to a small net loss of members each year. Twelve months ago the Society had around 470 financial members; however we believe that our member numbers should be kept above 500. The more members we have, the healthier, more vital and relevant our Society is in all sorts of ways. The need to meet this target is also driven by the signing last year of a 5-year contract with Wiley-Blackwell based on a minimum membership number of 500. This means that if we have fewer than 500 members we are paying for subscriptions we don't need. We are please to record that the past year has seen a very successful membership drive, with now over 510 financial Society members. Thanks to all those Regional Councillors and others who contributed

to this successful campaign. But it doesn't end here. We need to continue to keep new members flowing in to sustain the Society.

We recognise that one of the main tangible benefits of Society membership is access to the society journal. As many professional entomologists have access to this publication through their employer, the benefit of the journal is significantly discounted for these members. Members always receive a discounted registration rate for conferences and members can apply for (relatively modest) research grants each year. The Executive is negotiating with Wiley Blackwell to provide a page charge discount for members publishing in the Journal. Many of the other benefits of membership to the society are more intangible, but are particularly relevant to young entomologists beginning and building a career. Three main benefits emerge in this category: (1) information exchange through publications such as *Myrmecia* and meetings such as our annual conference, (2) collective representation of shared interests, and (3) involvement in professional networks and professional recognition through service and awards.

One of the major successes for the Society over the past few years has been the increasing ISI journal impact factor. This statistic is growing in importance as Universities, CSIRO and other employers search for quantitative means to assess the scientific impact of their research staff. The IF of the *Australian Journal of Entomology* is now just above 1, higher than any other entomology journal with a regional scope like ours. This success is due to a concerted effort by the journal Editor John Matthiessen, our Technical Editors, our Editorial Board and our Overview Editor Roger Kitching to increase the quality and therefore citability of the journal content. On behalf of the Society, we owe them our sincere thanks. Of course our future impact factor relies on authors continuing to submit high quality work to the journal, and authors citing papers published in our journal in upcoming manuscripts. So keep writing and citing for the *Australian Journal of Entomology*! Continuing the IT theme, the Journal has now moved to online submission of manuscripts through Manuscripts Central (http://mc.manuscriptcentral.com/aen). The Executive also would like to thank Sonya Broughton for taking over the editorship of *Myrmecia* in 2008. She has brought significant energy and enthusiasm to the role.

The Society has relied on the volunteer efforts of Murray Fletcher and the Orange Agricultural Research Institute to develop, maintain and serve the Society web site. Thanks to Murray for this absolutely critical effort over many years. The Executive is planning to move the Society web site to a new server maintained by the Taxonomic Research and Information Network (TRIN, www.taxonomy.org.au) and has commissioned a site redesign. In particular, we are planning that entomologists will be able to join or pay their subscriptions through the website.

The society has had successful joint conferences with the New Zealand Entomological Society at Lincoln University in Canterbury in 1996, and in Adelaide in 2006. We are planning another joint conference, this time in late August 2011, again at Lincoln University. Please consider this idea, and give your feedback to the Executive.

Lastly, we hope you enjoy the 40th AGM and conference here in Darwin. Thanks to the local organising committee, especially Brian Thistleton and Michael Braby, for organising such a full and exciting scientific and social program. I hope that many of you can use this opportunity to explore the Top End further while you are here. Next year's AGM will be in Perth, and we hope to see you there.

David YEATES
Vice President

MEMBERSHIP SECRETARY'S REPORT

Commencing in December 2008, I have taken over as Membership Secretary to lighten the workload of the treasurer.

The table below gives the membership trends over the last four years:

Category	30/6/06*	30/6/07*	30/6/08*	30/6/09
Honorary	5	5	4	6
Full members	368	366	360	377
Retired members	86	89	86	75
Joint membership	16	15	13	11
Student members	36	34	30	36
Affiliated Societies	3	3	3	3
Sustaining Associates	1	1	1	1
TOTAL	**515**	**513**	**497**	**509**
Myrmecia subscriptions	19	19	17	19

*Source: 2008 Report to AGM

While 5 members have resigned since the mailing of the 09/10 subscription forms and we have yet to finalise the list of members who will be suspended for non-payment of dues, it would appear that the membership decline has been reversed. In the coming year the members of the executive will continue to aggressively push membership on anybody who comes within arms length.

Since the last AGM, the following members have passed away:

- Royal Pullen 8/02/09
- Lindsay Barton-Browne 21/03/09
- Durno Murrary 25/04/09
- Gordon F. Grosse 17/04/09

Stephen CAMERON
Membership Secretary

AUSTRALIAN JOURNAL of ENTOMOLOGY

CHIEF EDITOR'S REPORT

Once again, the AGM coincides with my annual overseas travels that I have particular reasons for doing at this time of the year. I submit my apology and thank others familiar with the editorial matters for presenting my report and fielding questions.

Aims, scope and ongoing development of the Australian Journal of Entomology

The *Australian Journal of Entomology* is the premier vehicle for the publication of entomological research in the Australian region. It can only maintain this position if it continues to receive quality manuscripts and it minimizes the time between submission of a manuscript and publication of the paper. The Editorial Team, in conjunction with our publishers, Wiley-Blackwell, works hard to improve the stature of the Journal, maintain high standards of peer review and endeavour to minimise turn-around times. Members can participate in this process by submitting their high-level papers to the Journal and promptly handling papers that may be sent to them for review.

The big news this year is the 57% increase in the Journal's Impact Factor from 0.684 to 1.072, ranking the journal 28/72 in the entomology category of the SCI. There is good reason to believe that the impetus for this spectacular improvement is strongly related to the initiation of the 'Overview' section in Volume 48/1 (2008). Given that only 18 months has elapsed since the inaugural 'Overview', I am quietly confident that we will continue to see an upward trend in the impact factor and that 'Overview' papers will act as a 'magnet' to the Journal and so enhance prospects of greater recognition and citation of our papers in general.

I offer special thanks to Roger Kitching, the Overview Commissioning Editor for his tireless efforts in pursuing topics and authors for 'Overview' contributions.

The online availability of back issues of the Journal continues to be an outstanding success. Full-text Journal articles were downloaded 70,119 times in 2008. While this was a 15%

decline on the 2007 numbers, it simply reflects some stabilisation after the initial rush and is still well above the previous five years which averaged in the range 10,000 – 30,000 downloads per annum. It remains a tremendous vindication of the Executive's decision to use Society funds to digitise and make freely available all back issues of the Journal online. They are freely available online to all members at the Blackwell Synergy web site.

The other big news this year is the move to online submission of manuscripts through ScholarOne Manuscripts (formerly known as Manuscript Central) and abbreviated to S1M. This hasn't been without its challenges and I ask that users bear with the editorial team as we learn the new system.

As always with such innovations, there are advantages and disadvantages. It would be fair to say that S1M is not the most intuitive system and some of the terminology used reflects its American origin. This had led to some head-scratching by the team but we are gradually becoming accustomed to the system.

It does need to be borne in mind that S1M is probably aimed more at the way big journals with either a professional-based editorial office or a more hierarchical editorial team structure operate. However, the system is reasonably amenable to adaptation and we are gradually tuning it to our requirements.

I believe that the advantages will steadily accrue in the medium to long term, with the database nature of S1M enabling simpler reporting of submission and publication statistics, access to accumulated reviewers on the database and less risk of misplacing manuscripts.

Production

Production statistics for the *Australian Journal of Entomology* since the last AGM:

Volume	Part	Published	Pages	Papers
47	4	October 2008	125	13
48	1	January 2009	84	13
48	2	April 2009	104	12
48	3	July 2009	76	12

During the period July 2008-June 2009, the flow of manuscripts was (2008 in brackets):

Received	100 (124)
Accepted	32 (40)
Still in review	21 (23)
Rejected/withdrawn/lapsed after review	10 (11)
Rejected at submission	37 (50)
Total rejected	47 (61)

An apparent downward trend in submissions is a concern.

The other issue that continues to be of concern to me is to ensure that I balance the publication rate of papers with the incoming flow of accepted manuscripts. Each issue of the journal is scheduled for a particular date which must be met and each issue has a minimum page extent set by printing requirements.

I would feel more comfortable with more manuscripts as I am sometimes concerned about reaching the target for the next issue. The minimum page extent is 64 pages and we are usually quite well above that. However, a 64 page issue would feel physically thin and I have no desire to approach the minimum. My self-imposed minimum page extent is around 75 pages and I aim for at least 12 papers per issue.

Performance and promotion

The availability of Wiley-Blackwell's journals electronically, links to the Google search engine and the online availability of all back issues of the Journal have increased dramatically the online utilisation of the Journal

Wiley-Blackwell continues to target the Journal at exhibitions at relevant major conferences and meetings, direct marketing through promotional material, especially in Europe, North America and East Asia, and through advertising in other Wiley-Blackwell journals. The publisher reports comprehensively on all scientific, circulation and marketing metrics and initiatives for the Journal at the annual Editors' meeting which is held around July-August. I also encourage members to visit the Journal's web site at http://www.blackwellpublishing.com/AEN for information on the Journal.

Editorial team

Tom Chapman, Tim Heard, Grant Herron, Andrew Loch and Ken Walker continue to contribute great service to the Society as Technical Editors, as does Roger Kitching as

Commissioning Editor for 'Overview'. Thank you to all the Technical Editors for their hard work.

The members of the production team at Wiley-Blackwell (Rose Williams, Eugene Tan and Nadine Raydan) have been vital in the smooth running of the journal and in meeting production schedules. Their professionalism, enthusiasm and dedication make them a pleasure to work with.

On behalf of the Technical Editors I also thank the Editorial Board and the many referees who have given expert opinion on manuscripts. These contributions are vital to satisfying both readers and authors and enhancing the status of the *Australian Journal of Entomology*.

John MATTHIESSEN
Chief Editor

CONSERVATION COMMITTEE REPORT

Lachlan Farrington and Renate Faast (The University of Adelaide) have completed a project investigating effects of habitat fragmentation on genetic diversity of spider orchid (*Caladenia* spp.) and their insect pollinators (mostly male thynnine wasps) in Mount Lofty Ra., SA. *Caladenia* orchids are sexually deceptive to wasps, both visually and by simulating the pheromones of female wasps. The project was funded by ARC Linkage in collaboration with the Department of Environment and Heritage.

Nick Murphy and Michelle Guzik and Andy Austin (University of Adelaide), together with Mark Adams and Steve Cooper (South Australian Museum), funded by ARC Linkage and Discovery Programs, are investigating the diversity, evolution and conservation of invertebrates in Mound Springs in South Australia. The Mound Springs, natural discharge sites of the Great Artesian Basin, are increasingly being threatened by demands for artesian water for pastoralism, mining and generation of power. They are known to contain many endemic plant and animal species, yet despite their listing as a 'threatened ecological community' by the Federal government in 1999, these communities remain at direct risk of extinction. This project is utilising molecular techniques to examine and compare the evolution and diversity of invertebrates in the Mound Springs. It aims to identify regions of particular significance for conserving maximum genetic diversity across entire communities, and to assess the possible consequences of Mound Spring extinctions.

Steve Cooper, Remko Leijs and Chris Watts (South Australian Museum), Bill Humphreys (Western Australian Museum), and Andy Austin and Michelle Guzik (The University of Adelaide), are studying the diversity and evolution of subterranean invertebrate fauna (stygo-fauna) found in numerous (>50) isolated calcrete aquifers in the Yilgarn region of central Western Australia. The fauna comprises species radiations exhibiting high genetic diversity and endemicity in diverse assemblages of invertebrates such water beetles and crustaceans (e.g., isopods and amphipods). Funded by ARC Linkage and Discovery Programs, this project is using a combination of morphological and molecular analyses to elucidate their evolution processes and facilitate their sustainable management.

Gary Taylor, John Jennings, Andy Austin (The University of Adelaide) with Matt Purcell and Nancy Schellhorn (CSIRO Entomology, Brisbane), with funding from the ARC Linkage Program are investigating the systematics and co-speciation of insect herbivores on the Casuarinaceae (casuarinas or she-oaks), to document invertebrate biodiversity and generate data on host associations and geographic distributions for conservation, regeneration and land management.

Michael Braby (Northern Territory Museum & Art Gallery) and Fabian Douglas (Australian National University) published a paper in Australian Journal of Entomology (2008: 47: 315-329) revising the taxonomic status and nomenclature of the Eastern Bronze Azure, *Ogyris waterhouseri*. It is known from only six extant sites in South Australia and Victoria. Assessment of its conservation status indicates that its geographic range has contracted about 88-98% due to habitat loss, and would be eligible for listing as an endangered species under IUCN criteria.

Gary Taylor (University of Adelaide) and Melinda Moir (University of Melbourne) have recently described two new species of psyllids from single localities on threatened hosts, *Acacia*

veronica, Stirling Ra., WA and *Pultenaea glabra*, Blue Mtns, NSW, respectively (*Zootaxa*, in press). Both new species of *Acizzia* are considered at risk of extinction as they have been recorded only from single localities, on vulnerable or threatened hosts with restricted distributions.

South Australia does not have any invertebrate species listed as Rare, Vulnerable or Endangered under the National Parks and Wildlife Act (http://www.environment.sa.gov.au/biodiversity/threatened.html).

New South Wales and Victoria

Robin Gunning, Tim New and Paul Horne considered the impact of agribusiness in outer suburban Melbourne on insect fauna and habitat. This was in response to an invitation from the Parliament of Victoria (Outer Suburban Interface services & Development Committee) to make a submission to an enquiry on Agribusiness in Outer Suburban Melbourne. Robin prepared a short submission to the enquiry.

Robin Gunning sent submissions to the Australian Government's Department of the Environment, concerning the entomological aspects of listing Inland Grey Box Woodland as endangered, and up-listing the Cumberland Plains Woodland, NSW from endangered to critically endangered, under the *Environmental Protection and Biodiversity Conservation Act 1999.*

Robin Gunning is working on an insect survey in an area of the Liverpool Plains (Caroona), NSW that is threatened by coal mining.

Robin GUNNING
Convenor, Conservation Committee

EDUCATION COMMITTEE REPORT

A major aim of the education committee through 2009 was support and oversight of the project, Entomology Curriculum Australia (ECA). ECA's aim is to provide 3rd level entomology courses by remote delivery (distance education). The project has been sponsored by AES, Entomological Society of Queensland, GRDC and the University of Queensland, with major funding from Australian Learning and Teaching Council (ALTC). David Merritt, chair of the education committee, is project leader. The ALTC grant was received for Nov 2007-Nov 2009 with an extension being sought through to 2010.

Major activities through 2009 included; (1) the reconstruction of a 2nd level introductory entomology subject, *Insect Science*, at UQ, (2) development and delivery of the pilot version of the *Integrated Pest Management* subject at Charles Sturt University, (3) negotiations on a shared agreement for establishment of an *Insect Identification* subject offered alternately between UQ and UA, (4) planning of subjects *Insect Physiology* and *Insect Ecology*, (5) establishment of a memorandum of understanding among the participating institutions and (6) evaluations of the pilot implementations to aid subject development through 2009/2010.

Two trial pilot subjects are underway this semester: *Insect Science* at UQ (23 enrolled) and *IPM* at CSU (32 enrolled). For both, subject information, due-dates and assessment details are accessed via a password-protected online learning platform. In *Insect Science*, UQ, students access subject resources via the learning platform. CSU mails students the subject resources on CD, and in subsequent offerings will utilise a learning platform.

Students are directed through a series of topics: background information, student activities, text readings and a mini-lecture are associated with each topic. The mini-lectures—short 15 min voice over PowerPoint presentations of the main points—are an innovative aspect of remote delivery allowing students to hear and engage with the lecturer, obtaining a clear idea of where the lecturer places emphasis in each topic. Feedback to date indicates that students appreciate the focus provided by mini-lectures. Students are engaged in their learning and receive feedback from their lecturers through the use of asynchronous chat facilities via the learning platform.

The IPM subject at CSU also includes a feature that we hope to use in all future subjects: each module contains interviews with experts in the relevant area of entomology.

Students have access to optional support sessions that include insect pinning tutorial sessions and fieldwork. The University of Queensland has teamed up with Queensland Museum for the BugCatch field work opportunities and to produce insect trapping and pinning video tutorials. QM's support is much

appreciated. Students at both Charles Sturt University and University of Queensland have access to a tutor for additional assistance.

The subject *Insect Identification and Taxonomy* will be offered in summer semester, starting at the end of 2009. It will be offered in alternate years at University of Queensland and University of Adelaide, with John Jennings and Lyn Cook sharing the workload each year. This subject will have a compulsory residential component where students will be able to access the comprehensive teaching-based insect collections of the institutions for practical experience. The subjects *Insect Ecology* and *Insect Physiology* will be developed using similar approaches for offering in 2010.

ALTC funding period ends in November 2009. The project team will request a carryover of unspent funds into 2010 to allow evaluation and improvement of the courses. A priority for the team is to explore ways of obtaining ongoing financial support either from their institutions or through external sources to allow for ongoing curriculum oversight and management.

David J MERRITT

DARWIN 200: Evolution and Biodiversity
25 - 28 September 2009
Darwin, Australia
Australian Entomological Society's 40th AGM & Scientific Conference /
Society of Australian Systematic Biologists / 9th Invertebrate Biodiversity & Conservation

CONFERENCE REPORT

Darwin 200: Evolution and Biodiversity, the Combined Australian Entomological Society's 40th AGM & Scientific Conference / Society of Australian Systematic Biologists / 9th Invertebrate Biodiversity & Conservation Conference, was held from 25-28 September, 2009 at the Holiday Inn Esplanade Darwin. This meeting was arranged to follow on from a Special Charles Darwin Symposium being held 22-24 September 2009 to celebrate the 200th anniversary of the birth of Charles Darwin, 150th anniversary of his work The Origin of Species and, for Darwinites, the 170th anniversary of the naming of the Port of Darwin during the third voyage of the Beagle.

The conference consisted of 17 symposia covering evolution, biodiversity, ecology, biosecurity, applied entomology, biological control, taxonomy and its future, systematics, insect-plant interactions, social insects, invertebrate surveys, biodiversity conservation management, impacts of fire, genetics of climate change, threatened species, marine biodiversity and the Darwin Harbour. There were 19 plenary and keynote speakers, 133 contributed papers and 25 posters – 177 presentations in total. There were 201 delegates to the combined conference, including 80 full AES members and 12 AES student members.

Brian Thistleton (Photo by Sohail Qureshi)

Chris Austin addresses the conference (Photo by Brian Thistleton)

Social events included a Welcome Reception at the NT Library where a copy of a first edition of On The Origin of Species, on loan from the State Library of New South Wales, was on view; a reception at Crocosaurus Cove where large salt water crocodiles are on display right in the centre of Darwin; and, of course, the conference dinner.

The Phil Carne prize was awarded to Kylie Anderson for her work on *Eumetopina flavipes* (Hemiptera: Delphacidae) in PNG and the Torres Straight Islands and her Phil Carne address was

entitled How sweet it is! The effect of host availability on the invasion potential of the island sugarcane planthopper.

The usual illustration, photographic and student presentation and poster sessions were held. There were 17 entrants to the student black and white illustrations competition with a total of 25 pictures, and the first and second prizes were awarded to Christine Rockley for an illustration of the robber fly *Chrysopogon kastanios*, and Nadia Waters (water scorpion *Laccotrephes tristis*) respectively.

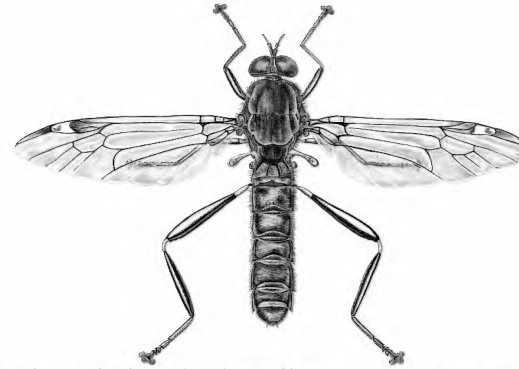
There were only two entries for the student colour illustration and the first prize was awarded to Timothy Owers (green Christmas beetle *Anoplognathus prasinus*). The open illustration black and white had two entrants with a total of four pictures and the first prize was awarded to Dina Yu. Rogatnkh (zopherid *Phellopsis amurensis*), while the Open Illustration Colour had three entrants and a total of three pictures with the first prize going to David Poyner (chrysomelid beetle *Spilopyra sumptuosa*).

The photographic competition attracted seven entrants with a total of 16 photographs and the first, second and third prizes were awarded to Graham Brown (tabanid *Tabanus ?pallipennis*), Stephen Doggett (spider *Dinopis subrufa*) and Neil Wright (dragonfly *Lathecrista asiatica*).

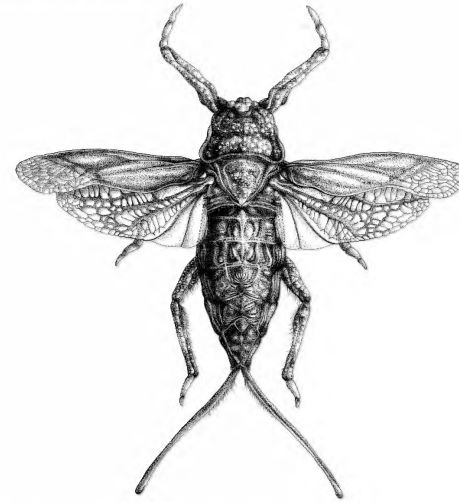
There were 26 student papers with the winner being Cheryl O'Dwyer (Insect assemblages in grey box grassy woodlands) and three student posters won by Katrina Fernandez (Diversity and functional grouping of ground foraging ant fauna on the sadas of the Western Ghats of South India).There were 26 student papers with the winner being Cheryl O'Dwyer (Insect assemblages in grey box grassy woodlands) and three student posters won by Katrina Fernandez (Diversity and functional grouping of ground foraging ant fauna on the sadas of the Western Ghats of South India).

The organising committee comprised Professor Chris Austin (Head of School, School of Environmental and Life Sciences, Charles Darwin University) representing Invertebrate Biodiversity & Conservation, Dr Michael Braby (Curator of Entomology, Museum and Art Gallery Northern Territory) for Society of Australian Systematic Biologists, and Dr Graham Brown and Dr Brian Thistleton (Principal Entomologist, NT Department of Regional Development, Primary Industry, Fisheries and Resources) representing the Australian Entomological Society.

Brian THISTLETON



Student Black and White Illustrations - First prize. Robber fly,* Chrysopogon kastanios, *drawing by Christine Rockley.



Student Second Prize. Water scorpion* Laccotrephes tristis*, drawing by Nadia Waters.

Winner of the photographic competition - Graham Brown for his photo of a Tabanid (Tabanus ?pallipennis).

Theo Evans talks with Brian Thistleton at the welcome reception (Photo Sohail Qureshi)

Audience view (Photo Brian Thistleton)

Graham Brown (Photo Brian Thistleton)

Myron Zalucki (UQ) presents the Phil Carne Prize to Kylie Anderson. (Photo Brian Thistleton)

Deane Woruba and Brian Thistleton at the conference dinner (Photo Murray Fletcher)

Welcome reception (Photo Sohail Qureshi)

Murray Fletcher, Sohail (Sunny) Qureshi, Aziz Ajlan, Catherine Gitau and Nader Salam enjoy a tea break (Photo Gary Fitt)

Rolf Oberprieler (Photo Brian Thistleton)

Chris Austin (Photo Brian Thistleton)

David Yeates talks with Theo Evans (Photo Brian Thistleton)

Aziz Ajlan and Sohail Qureshi (Photo Brian Thistleton)

Mali Malapatil and Ian Naumann (Photo Brian Thistleton)

Sally Brown (Sally Brown Conference Connections) receives a gift for her help in organising the conference from Chris Austin (Photo Brian Thistleton)

Conference Dinner (photo Brian Thistleton)

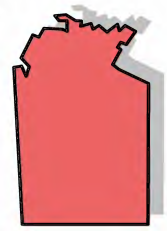
Michael Braby (Photo Brian Thistleton)

Geoffrey Bedford and Marianne Horak (Photo Brian Thistleton

Theo Evans (Photo Brian Thistleton)

Deane Woruba (Photo Brian Thistleton)

ENTOMOLOGY AROUND AUSTRALIA



NORTHERN TERRITORY

Many eNTomologists are only just returning to their day jobs after helping to organise the combined Australian Entomological Society 40th AGM & Scientific Conference / Society of Australian Systematic Biologists / 9th Invertebrate Biodiversity & Conservation Conference held last month in Darwin. Many thanks to all who made the conference a great success: members of the organising committee, symposium organisers, speakers and delegates, as well as Sally Brown and her team at Conference Connections who organised many of the logistics. We can already look forward to next year's AES meeting and scientific conference, which will be held in Perth. Plans are well underway, so keep a lookout for updates in upcoming issues of *Myrmecia* and on the Society's website.

Department of Natural Resources, Environment, the Arts and Sport

Anne Walters and **Jason Pemberton** have won the 2009 Chief of Defence and Secretary of Environment and Heritage Award for Commitment and Contribution to Environmental Management for their work on the detection and containment of Yellow Crazy Ants at the Australian Defence Establishment in Berrimah. This work was conducted in partnership with environmental staff from the Department of Defence. Congratulations to Anne and Jason.

CSIRO Sustainable Ecosystems – Tropical Ecosystems Research Centre

CSIRO ant ecologist and research leader of the TERC, **Alan Andersen**, was recently awarded a Charles Darwin Research and Innovation Medal in recognition of the contribution his science leadership and research achievements have made to the Northern Territory. Congratulations to Alan.

In other news from the Darwin ant biodiversity lab, Alan Anderson has picked up a new ant genus for the NT on the Tiwi Island fire plots. It is a new species of the southern Australian genus *Epopostruma*, a specialist predator. It brings to four the number of ant genera that CSIRO staff have found this year on Melville Island that are not known elsewhere in the NT. The ant lab is also currently hosting **Wayne Robinson** from the University of the Sunshine Coast for a few weeks. Wayne is a part-time PhD student under Alan's co-supervision, working on invasive ants on Fraser Island.

Former CSIRO postdoctoral fellow, **Kate Parr**, was back in the Darwin lab in August. Kate left CSIRO in early 2007 to take up the Trapnell Fellowship in African Ecology, based with the Environmental Change Institute at Oxford University. While in Darwin, Kate analysed the results from CSIRO's surveys of ants along the North Australian Tropical Transect (NATT) rainfall gradient (Darwin to Alice Springs). Results show two major biogeographic disjunctions, one around Katherine (separating a high-rainfall Top End fauna from a lower rainfall, semi-arid tropical fauna), and between Kidman Springs in the Victoria River District and Kalkaringi in the northern Tanami, separating the semi-arid tropics from the central arid zone.

Chris PALMER
NT Regional Councillor

AUSTRALIAN CAPITAL TERRITORY

ANIC

ANIC sent a strong contingent to the Society's AGM in Darwin this year. **Marianne Horak**, **Ainsley Seago**, **Beth Mantle**, **Rolf Oberprieler**, **Bryan Lessard**, **Michael Thompson**, **Alice Wells**, **Leigh Nelson**, **Bobbie Hitchcock**, **David Yeates**, **John LaSalle**, and **Laurence Mound** took part in the conference, and most also took the opportunity to visit institutions and do some field work in and around Darwin. **Bobbie Hitchcock's** trip north included participation in the CRC Science Exchange on the Gold Coast, where she received a well-deserved award for collaborative achievement for her work on *Epiphyas* in the CRC for National Plant Biosecurity.

Rolf Oberprieler extended his stay in Darwin to visit the CSIRO laboratory at Berrimah and the nearby Berrimah Research Station, to sort out some of their weevil collections. Rolf also collaborated with Trevor Crosby from the New Zealand Arthropod Collection, who was visiting Vietnam, to use the internet from Hanoi to connect to the remote microscope network to identify some mango weevils of the genus *Sternochetus*. **Thomas Wallenius** attended the Sixth Biennial Meeting of the Australasian Evolutionary Society at ANU, and has submitted his first paper on the role of weevils in cycad pollination. **Adam Slipinski** put in some long days checking proofs of multiple beetle chapters in the *Handbook of Zoology*, and together with visitor **Hong Peng**, completed a taxonomic paper on 88 species of Coccinellidae.

Lepidopterists gather for a weekend moth workshop in ANIC, August 2009 (photo Bruce Halliday)

While she was in Darwin, **Beth Mantle** represented ANIC at the CHAEC (Council of Heads of Australian Entomological Collections) meeting and enjoyed the opportunity to meet many of the people she has already had contact with since commencing her role as ANIC Collection Manager in January this year. Beth also visited the Darwin CSIRO Sustainable Ecosystems laboratories and spent a couple of hours with **Alan Anderson** discussing his research, meeting CSE staff and inspecting their small but comprehensive and well curated insect collection. She also represented ANIC at the Faunal Collections Informatics Group subcommittee meeting, which ran concurrently with the CHAFC meeting at the Museum and Art Gallery of the Northern Territory (MAGNT). During this time, MAGNT's Collection Manager, Gavin Dally, and Collections Registrar, Christine Tarbett-Buckley, generously gave their time to show Beth around the Natural Sciences' collection facilities, which she found extremely interesting and enjoyable.

David Yeates had his usual busy round of meetings, including the Society's Scientific Conference and AGM, which he will report on elsewhere in this issue, and the meeting of CHAFC at the Northern Territory Museum and

Art Gallery. **Leigh Nelson** visited **Sonja Scheffer** at the USDA in Maryland, to work on their collaborative project on *Fergusobia* nematodes and *Fergusonina* flies, which together form galls on snow gums. **Bryan Lessard** visited Brian Weigmann at North Carolina State University, to learn how to sequence nuclear genes for use in his molecular phylogeny of horse-flies of the genus *Scaptia*. While he was in the neighbourhood, Bryan also visited the Smithsonian Institution to look at types of some species of Tabanidae.

The Lepidoptera laboratory was a busy place in August, when 30 amateur and professional Lepidopterists converged on Canberra for the fourth ANIC moth weekend, to study the collection and discuss of moths of all kinds. Stacey Anderson from the Northern Territory DPI also visited for a week to dissect and identify some exotic Pyraloidea that pose a biosecurity threat to Australia's northern borders. Also in the Lepidoptera laboratory, **You Ning Su** has started work on sorting and curating the collection of Arctiidae, a group that includes many species that have been the subject of biological studies as a result of their aposematic colouration. **Marianne Horak** presented a paper at the Darwin conference on the life history of scribbly gum moths, which has been elucidated over the last four years by a team led by **Max Day** and **Celia Barlow**. Marianne announced her intention to retire in July next year, so the process of recruiting a new lepidopterist for ANIC has begun.

Mike Hodda presented a workshop on nematode systematics at the Australasian Plant Pathology Conference in Newcastle, and led an intensive five day training program on nematode identification and techniques for eight participants from Australia and overseas. With collaborators **Aisuo Wang** and **Gavin Ash** from Charles Sturt University, Mike recently completed a survey on parasitic nematodes that have potential as biological control agents of pest snails. Mike also has a paper appearing in November on a new genus of nematodes from eucalypt bark. The last genus of free-living nematodes described from Australia was over 40 years ago.

Brian Heterick and **Steve Shattuck** report that their major manuscript on 80 species of the ant genus *Iridomyrmex* is nearing completion. **Tom Weir** made another trip to the Australian Museum and Macleay Museum to check the identification of aquatic and semi-aquatic bugs and compile the associated locality data.

We are very pleased to welcome new Post-Doctoral Fellow **Nicole Gunter**. Nicole did her PhD at the Queensland Museum and University of Queensland on the molecular systematics of a group of internal parasites that occur in the gall bladders of fish. She has now started work on a project whose objective is to produce a phylogeny of the Coleoptera based on sequence data for every one of the 3,000 endemic genera of Australian beetles.

Recent visitors to ANIC included **Matt Yoder** from North Carolina State University, who worked in the Hymenoptera collection for two weeks and gave a talk about attempts to stabilise the anatomical nomenclature used for morphological structures in Hymenoptera; **Federica Turco** from the Queensland Museum, who is revising the beetles of the family Zopheridae, and **John Marris** from Lincoln University, New Zealand, who is working on a paper Cucujoidea with **Adam Slipinski**.

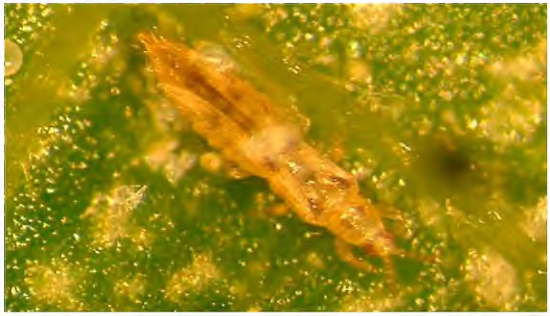
John LaSalle demonstrated the Virtual Taxonomic Laboratory to CSIRO Chief Executive Officer Megan Clark and Chairman of the CSIRO Board John Stocker. The VTL is a direct outcome of a scientific collaboration between CSIRO and the Chinese Academy of Sciences, Beijing, using an extension of the remote microscope network. It will be of benefit to both organisations, by promoting collaborative research, real-time remote diagnostics to support biosecurity and sustainable agriculture, teaching and training, and the creation of a global network of taxonomic institutes working together to accelerate the taxonomic process. John and other ANIC staff also took part in a workshop on Imaging, Phenomics and Biosecurity. That meeting attracted over 40 participants from 14 different institutions and programs including Atlas of Living Australia, the Pest and Disease Image Library (PaDIL), LUCID, and the Encyclopaedia of Life.

Entomologists and pathologists gathered at Sea World on the Gold Coast for the IX International Symposium on Thrips and Tospoviruses in late August

Participants shared ideas and technologies for the collection and analysis of image data in projects as diverse as the development of a fish identification system based on the Australian National Fish Collection, plant biomass estimation from stereo-imaging of crop canopies, and the use of gigapixel imaging as the basis for an annotated synoptic view of the Australian National Insect Collection and Australian National Herbarium.

The Remote Microscope Network has continued to expand. It is now operating in the Northern Territory at Katherine and Darwin, and the system will soon be active all over Victoria. A further exciting development is the use of the Remote Microscope as a training tool for AQIS personnel. This application is now being tested on some weevil identifications, with support from **Rolf Oberprieler**.

The Thrips Room has seen an exceptional amount of activity this quarter. As a result of much hard work from **Dena Paris**, the World Thysanoptera website http://anic.ento.csiro.au/thrips/ was launched at the International Symposium on Thrips and Tospoviruses at the end of August. This site is being developed progressively to include identification keys to Australian Thysanoptera, but with the ability to link to similar Lucid keys from other parts of the world. It also includes a very wide range of information about these insects. **Kambiz Minaei** from Shiraz University visited for August, and drafted three papers on different groups of thrips from Iran. **Greg Wheeler**, a biocontrol specialist from USDA, Talahassee, visited to discuss the thrips species that attack Brazilian pepper tree, and that are of interest in the control of this invasive weed in Florida. **Joe Funderburk** from the University of Florida, Quincy, came to discuss the problems of identifying pest thrips he encounters in Guatemala and Ecuador, because in parts of South America Western Flower Thrips look slightly different from the pest populations found in other parts of the world.



Does the mite predator* Scolothrips sexmaculatus *occur in Australia? (Photo S. Broughton)

Alice Wells and **Laurence Mound** spent a few days in Kununurra searching for thrips, with **Luke Halling** from AQIS at Broome, and **John Moulden** from the Western Australia Agriculture Department. The main success of that visit seems likely to be the eventual identification of the *Scolothrips* species that are common (but rarely collected) predators on mites. The name *sexmaculatus* is often applied to these thrips, but there is no good evidence that this North American species has ever occurred in Australia.

Bruce HALLIDAY

QUEENSLAND

Primary Industries and Fisheries, Cairns & Mareeba

Harry Fay has been working with **Jeff Aldrich** and **Ashot Khrimian** from the USDA Invasive Insect Biocontrol and Behavior Laboratory in Beltsville on the sex pheromone of the fruitspotting bug *Amblypelta lutescens*. These pests cause major losses in crops such as avocados, macadamias and papaws across northern Australia and are very difficult to control effectively. A pheromone would potentially offer a practical means to monitor bug activity, which can currently only be achieved by assessing crop damage. **Geoff Waite** and **Jeff Aldrich** commenced the pheromone work in the early 1990s but progress stalled because one of the components indicated through GC-MS couldn't be identified. Improvements in aeration protocols and rapid transit of collected material to the US have helped to overcome this problem. The outstanding component has now been positively identified, its isomeric configuration determined and the compound synthesized. Lures were prepared in Beltsville and received in Australia for field testing in early September. Results to date are promising despite relatively inefficient traps, with bugs being attracted to the lures for the last 3 weeks.

After the passing of Ross Storey last year, the fate of the Mareeba insect collection has been under discussion. **Jane Royer** from the Cairns Biosecurity Entomology Laboratory the will now be the custodian of the majority of Ross Storey's collection. The sorted component will be moved to Jane's lab in Cairns; a representative subsection will be retained in Mareeba by Harry Fay; and unsorted material and Ross's research scarabs will be moved to Primary Industries in Brisbane. Ross Storey's insect collection represents over 40 years of agriculturally relevant insect collecting in north Queensland, is one of Australia's foremost collections of tropical insects and is an invaluable resource for north Queensland entomology. The move to Cairns is happening over the next few months and from early in the new year will be available for loans and visits (jane.royer@deedi.qld.gov.au).

AQIS Cairns

After more than 13 years of guiding and managing NPA and Torres Strait fruit fly monitoring surveillance for NAQS, **Kerrie Huxham** has put away her microscope in order to further her studies on higher mammals, as it were. Kerrie is now studying nursing in relation to tropical health. Best of luck Kerrie! Meanwhile, the intrepid NAQS Plant Health entomologists **Anthony Rice** and **Sally Cowan** continue their field activities in remotest north Queensland in the hope of detecting early incursions of exotic pest insects. So far this year, they have detected nothing untoward in the survey zones visited. In late July, **Tony Postle** attended a termite-identification workshop in Sydney. Under the auspices of termite specialist Bob Eldridge, Tony worked his way through samples of drywood termites collected on various NAQS surveys undertaken throughout Cape York Peninsula and Torres Strait. Tony is happy to report that although several of the

species are undescribed, no exotic termites were detected amongst the material.

James Cook University

Ross Crozier's group (with other authors) has a review on taxonomic practice titled Integrative Taxonomy: a Multisource Approach to Exploring Biodiversity. This is appearing in this year's Annual Review of Entomology and is available online now. **Ross Crozier** was MC for Day 2 at the recent Charles Darwin Symposium run by CDU, and then presented two talks, one a plenary, at the Biodiversity Conference following the CD Symposium.

Kylie Anderson won the prestigious Phil Carne award for her paper "*How sweet it is! The effect of host availability on the invasion potential of the island sugarcane planthopper*" at the Biodiversity meeting in Darwin. Congratulations Kylie!

Free Range Entomologists

Dave Rentz has just returned from a two week stint in the Muller Range of Papua New Guinea where he participated in a Conservation International Rapid Assessment Program. The trip was a success with more than 50 species of katydids collected at two sites. The Muller Range photos can be viewed from "Dropbox" at https://www.getdropbox.com/"

Paul Zborowski reports that The Field Guide to Insects of Australia, originally written with Ross Story in 1995, has gone to printers with a January release date. It's a whole new, much bigger, rewritten (alas by Paul only) 3rd edition guide, dedicated to Ross. Later next year a CSIRO guide to Beetles (written with **George Hangay)** will follow with over 300 species illustrated as living critters, and this will be followed by a new book yet to be titled, on camouflage and mimicry.

Paul Zborowski and **David Rentz** have had the light sheets out (nothing unusual there) for **Marianne Horak** from ANIC who has been visiting after the AES Conference. Paul and David will also have another Lepidopterist **visiting** in December: **Marc Epstein** from the California Department of Food and Agriculture, specialises in limacocids and is interested in collecting tortricids and limacocids in north Queensland.

Mosquito Control Laboratory, Queensland Institute of Medical Research

In August 2009, **Peter Ryan** returned from a 13 month off-shore research posting with the Ministry of Health and the Australian Foundation for Peoples of Asia and the Pacific Ltd, in Ho Chi Minh City, Vietnam. Peter has been working with QIMR-UQ PhD students **Hau Tran** and **Le Anh Nguyen** to define and ameliorate water related dengue transmission risk in southern Vietnam, as part of an AusAID dengue control project (http://www.dengue.qimr.edu.au). He has also been helping to coordinate field research in central Vietnam, including the development of baseline data on *Aedes aegypti* populations on an Island field site that has been identified as a potential pilot release site as part of a Gates Grand Challenge in Global Health research project, lead by Scott O'Neill at the University of Queensland (http://www.eliminatedengue.com).

Brian Kay continues as the Deputy Director of the Australian Centre for International and Tropical Health, a joint QIMR-UQ initiative which has operated for 23 years. Unfortunately in May, the Australian Government decided to terminate the Public Health Education and Research Program nationally as part of economic stringencies but efforts are being made to find alternate funding sources after December 2010. On the brighter side, in August Brian went to Vietnam to assist in review of the year 4 evaluation of their AusAID funded dengue control program and during these proceedings was awarded the "Memorabililia of Peoples Health" medal from the Ministry of Health. He has worked on their highly acclaimed community-based dengue program for 20 years.

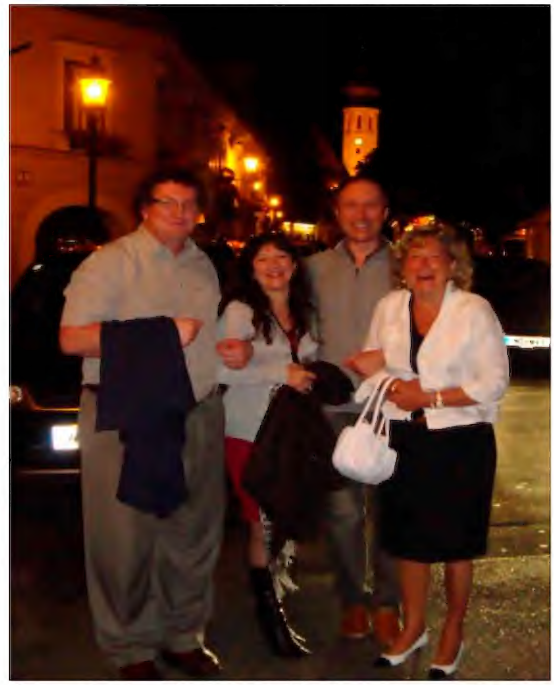
Jason Jeffery has been working with Vietnamese colleagues to define the short-term temporal and spatial abundance of the *Ae. aegypti* population on an island field site in central Vietnam, as a prerequisite for a population replacement strategy using a strain of *Wolbachia* bacteria to eliminate dengue. In collaboration with Vietnamese colleagues, he has also been releasing mosquitoes into a large field-cage during different seasons in Nha Trang, Vietnam, to test an age-grading method based on gene transcriptional profiles in a more natural setting. 1000s of specimens have been brought back to Brisbane where **Brendan Trewin** is processing these by gene transcription analysis to generate age predictions.

Tim Hurst has completed the latest of a series of seasonal backyard mosquito surveys in suburban Brisbane aimed at determining the relationships between water usage and storage and mosquito abundance in south east Queensland. This forms part of a larger project which will allow us to predict the impact of both evolutionary potential and changed human behaviour on the future distribution of *Aedes* species. This project, funded by the Commonwealth Environment Research Facilities, is a collaborative effort between QIMR, Brisbane City Council and researchers in Melbourne, Adelaide, New South Wales and North Queensland.

Jonathan Darbro is investigating a promising new Australian isolate of the entomopathogenic fungus *Beauveria bassiana* as a potential control tool of the dengue mosquito *Aedes aegypti*. He is collaborating with researchers at James Cook University to conduct large-cage trials in northern Queensland to evaluate the efficacy of this isolate in field conditions.

Guangjin Lu is investigating interesting interactions between *Wolbachia* and dengue virus infections in *Aedes aegypti* in collaboration with the O'Neill laboratory, School of Biological Sciences, UQ.

Leon Hugo and **James Monkman** are investigating age prediction methods for mosquitoes based on protein abundance changes in an effort to produce a low cost and field deployable age prediction assay. **Ben Rutherford** is drawing to the end of a technically challenging Honours project developing new protein investigation strategies, including iTRAQ labeling and liquid chromatography/mass spectrometry, for the identification of age biomarkers in *Aedes aegypti*. **Maggy Sikulu** joined the laboratory in June to commence her PhD. She is researching the application of age grading methods to *Anopheles* vectors of malaria and measuring changes to the age structure of *Anopheles* population age structure following malaria control interventions in east Africa.



Tony Clarke (Left) and Mark Schutze (middle) doing serious networking with colleagues Karen Armstrong (Lincoln Uni, NZ) and Anna Malacrida (Pavia Uni, Italy) in Vienna.

Queensland University of Technology

Fruit fly work at QUT is starting to ramp up seriously with funding from the CRC NPB. **Tony Clarke** and **Mark Schutze** made valuable links with the international fruit fly community (see picture) at an FAO/IAEA Consultants meeting in Vienna in July discussing a new CRP project on resolving sibling species groups in the *Bactrocera* and *Anastrepha*. Australia was also represented by **Dick Drew** (Griffith Uni), while **Andrew Jessup** chaired the meeting. A new

international project will now run in parallel to the CRCNPB funded project seeking resolution of the *Bactrocera dorsalis/philippinensis/papayae* complex. Congratulations to **Amy Carmichael** for completing her masters (Taxonomy and diagnostics of opiine fruit fly parasitoids) and **Amanda Mararuai** for submitting her PhD (Market access for PNG bananas with particular reference to *Bactrocera musae).*

Tony CLARKE
SE Qld Regional Councillor

TASMANIA

University of Tasmania, *School of Agricultural Science and Tasmanian Institute of Agricultural Research*

Geoff Allen and **Paul Walker** attended a workshop on white-fringed weevils (*Naupactus leucoloma*) at Ulverstone, northern Tasmania, in September, along with **Paul Horne** and **Jessica Page** (IPM Technologies Pty Ltd, Victoria). Both Pauls gave a short talk to local potato industry representatives about this weevil which appears to spreading and is becoming a major pest concern in several vegetable crops. However, it was speculated that the very wet weather that Tasmania has experienced over the last four months may help to reduce next years' populations - just in time for the start of a new HAL funded research project. Following the workshop, the first of two field days was held in early October near Ulverstone in which Paul H and Jessica demonstrated to growers and agronomists their sampling protocol for white-fringed weevil larvae. In September, **Stephen Quarrell** travelled to NSW to collect European earwigs (*Forficula auricularia) as* part of his sub-species mapping study. Honours student **Raylea Parr** continues to rear *Nyctemera amica* and *Uraba lugens* for her study on the host range of *Cotesia urabae*, a known parasitoid of the latter.

Department of Primary Industries, Parks, Water and Environment

Jamie Davies reports that **Margaret Williams** retired as manager of the Plant Health Branch on the 31st of July, 2009. Margaret has had long and distinguished career in branch management and entomology. Margaret initially trained in entomology at the University of Queensland and joined the then Tasmanian Department of Agriculture in 1971. Margaret worked primarily in the orchard and soft fruit sectors, both in IPM and postharvest disinfestation, as well as serving in national quarantine before becoming manager of the Diagnostic Services group which included the Animal Health Laboratories at Mt Pleasant, Launceston and the Plant Health Group at New Town. Margaret's expertise will be missed at New Town and all branch staff wish her well for the future.

Forestry Tasmania

Jane Elek reports that she, along with **Vin Patel** and **Geoff Allen** (UTas), have a busy summer ahead as the *E. nitens* plantations in which their trap-tree plots have been planted are 'coming of age' (ie. starting to produce the foliage that the *Paropsisterna bimaculata* chrysomelids attack). That means they need to treat the trap trees with a systemic insecticide to render them lethal to the adult beetles that they attract. When the trap trees have been treated in a number of plantations, they will be busy monitoring the chrysomelid populations in the surrounding plantations to evaluate the effectiveness of the lethal trap trees at protecting the plantation trees.

Simon Grove recently attended the Invertebrate Biodiversity and Conservation conference in Darwin, where he presented a talk on giant velvet worms and Tasmanian forestry, as well as a poster overviewing the vast diversity of beetles recorded at Warra during the first decade of research there. In a personal capacity he also presented another poster on a web-site that he maintains, covering Tasmania's marine molluscs (www.molluscsoftasmania.net). While in Darwin, Simon also attended the annual meeting of the Council of the Heads of Australian Insect Collections, representing the Tasmanian Forest Insect Collection that Forestry Tasmania hosts. Back in Hobart, Simon and colleagues at Forestry Tasmania are putting the finishing touches to the experimental design for a new, three-year landscape ecology research project to be carried out in Tasmania's southern forests. The project aims to test the validity of the 'CAR reserves complemented by off-reserve management' model for biodiversity conservation promulgated by the Regional

Forests Agreement. It will involve sampling a variety of taxa (including saproxylic beetles) at multiple study-sites across a range of forest landscapes that are exposed to differing degrees of intensities of forest management and natural disturbance.

Other Tasmanian news

David de Little will be helping **Claudio Goycoolea** and **Ariel Sandoval** of Controladora de Plagas Forestales S. A. (Chile) who will visit Tasmania during the first 2 weeks of November to collect Mymarid egg parasitoids (*Anaphes* spp.) of Eucalypt snout weevil (*Gonipterus scutellatus*) for biological control purposes in Chile.

Paul WALKER
Tasmania Regional Councillor

WESTERN AUSTRALIA

Western Australian Museum

The winter months saw **Terry Houston** get active with his spade again in search of earth-borer beetles (Geotrupidae), their food fungi and immature stages. In addition, he has gone in search of flightless carcass beetles (genus *Omorgus*, family Trogidae) in an effort to clarify their diet. Adults of one species (see photo) were found feeding on vertebrate droppings containing mammal fur and insect chitin.

Recent visitors to the Entomology collection included **Hojun Song** and **Joey Mugleston** from Brigham Young University, Utah, studying Orthoptera and **Geoff Monteith** and **Federica Turco** from the Queensland Museum. Geoff concentrated on dung beetles while Federica was interested in zopherid and meloid beetles, amongst others.

The Entomology Section has been pleased to welcome **Evline Berger** as a short term employee whose task it is to capture the Museum's identified Hemiptera data.

A flightless trogid beetle,* Omorgus mariae*?, from the northern wheatbelt of WA. (Photo Terry Houston)

Curtin University

The long-awaited book entitled 'A Guide to the Ants of Southwestern Australia' by **Brian Heterick** has been published. Readers will be able to key out and learn more about the 500 or so species that occur within this region. Copies of the book can be obtained from Curtin for $40, which includes postage (address letter to **Jonathan Majer** or **Brian Heterick**). **Alan Marshall's** ecomimicry book, entitled 'Wild Design' has also hit the bookshops. Although not an entomological book, it includes a bus shelter inspired by the shape of a curculionid beetle! **Anita Lyons** recently visited the Department when she attended the graduation ceremony at which her doctorate was conferred. Anita also discussed the remote diagnostic microscope program, as one is about to be installed in Curtin's entomology laboratory. This is because Curtin will be performing the Barrow Island invertebrate surveillance program for Chevron, as part of the Gorgon gas project. The laboratory is currently being refurbished in preparation for this, and **Nihara Gunawardene** and **Christopher Taylor** have been appointed to undertake the surveys, process the material look for incursions. As well as attending our Darwin conference, **Jonathan Majer** attended the conference for the Society of Ecological Restoration International, which recently took place in Perth. He gave the introductory talk at the 'Field of dreams' symposium, which addressed the issue of 'will the fauna

automatically return if the appropriate vegetation is put in place?'.

Murdoch University

Murdoch University researcher **Mehmet Cakir** has started a GRDC – funded project for the pre-emptive breeding of Russian Wheat Aphid (RWA) resistance into Australian wheat and barley commercial varieties. The overall aim of this project is to build a global research network for the safeguarding of Australian Grains Industry towards a RWA invasion. Besides the resistance breeding, the project aims to compile and characterize wheat and barley germplasm from around the globe against various biotypes of the aphid that exist in USA, Argentina, Chile, Mexico, France, South Africa, Kenya, Ethiopia and Syria. Mehmet and his colleagues from CSIRO - **Owain Edwards**, QDPI&F - **Mandy Christopher** and **Jerry Francoviak**)and various countries such as USA, Argentina, France, South Africa, Kenya, Ethiopia and Syria are also mapping the genes from the new sources of resistances and developing molecular markers for marker-assisted selection. **Mehmet Cakir** has recently given a talk at the International Triticeae Mapping Initiative (ITMI) conference in France about the first findings of the project reporting that Australian commercial wheat and barley lines were completely susceptible to biotypes in USA, South Africa and Argentina.

Department of Agriculture and Food, Western Australia (DAFWA)

Frank Wise Institute of Tropical Agriculture in Kununurra

Penny Goldsmith from DAFWA research station in Kununurra reported that fifteen Genetically Modified (GM) cotton varieties were sown on the department's research station in April, all carrying the combination of genes which provides complete control of bollworm and budworm plus tolerance to Roundup herbicide. The harvest of the GM cotton has been completed and a trial crop planted to commercial standards yielded 9.7 bales per hectare, slightly higher than the Australian average in 2007-08 of 9.3 bales per hectare.

Penny Goldsmith in GM Cotton field in Kununurra (Photo J. Moulden)

During October the harvest would be processed to separate the lint from the seed. After ginning, the cotton will be sent to the Cotton Cooperative Research Centre at Narrabri in New South Wales for quality testing. Penny mentioned that water availability was becoming a limitation to cotton growing in New South Wales and Queensland and had led to increase interest in cotton development on the Ord River Irrigation Area (ORIA). The Western Australian State Government lifted the ban on growing GM cotton in the ORIA late last year.

South Perth

Sonya Broughton received a visit from **Elleunorah Allsopp,** senior researcher with ARC Infruitec-Nietvoorbij, Stellenbosch, to discuss research in thrips in stone and pome fruit. Sonya and Elleunorah then headed over to the Gold Coast for the International Symposium on Thysanoptera and Tospoviruses. Sonya presented two papers and three posters on her recent work on thrips and on the anthocorid bug, *Orius armatus*, on behalf of **Lachlan Chilman** of ManChil IPM. Sonya has also been cajoling fellow ento bike riders to participate in the annual Bike to Work competition. The Lost Bearings recently met at a local café to breakfast.

Maria Majer gave a talk at the Australian Entomological Society's 40th Annual General Meeting and Scientific Conference 2009 in Darwin on 'Development of a Surveillance

Simulation Platform for establishment and spread of Emergency Plant Pests (EPPs): examining Australian concerns'. She also presented a poster 'Modelling establishment and spread potential of *Bactrocera* fruit flies: Australian concerns for a surveillance program' co-authored by **John Botha** and **Juan J. Garcia Adeva**. Before the conference, **Maria Majer** and **Juan J. Garcia Adeva** attended the CRC for Plant Biosecurity' Science Exchange meeting in the Sunshine Coast, where they had a discussion group about modelling dispersal of EPPs in Australia.

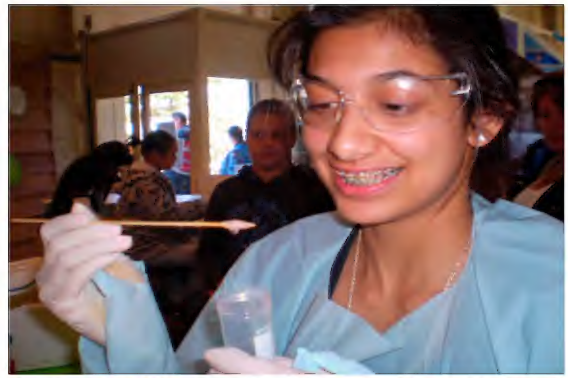
The Lost Bearings. From left. Alan Lord, Mike Grimm, Bill Woods, Darryl Hardie, Ernie Steiner. Marc Widmer and Peter Davis. (Photo S. Broughton)

Modika Perera from the DAFWA – Biotechnology group was kept busy with the organisation of activities for the 2009 Perth Royal Show which ran from Saturday 26 September to Saturday 03 October. This year the DAFWA Biotechnology group display at the Centenary Pavilion was focus on GM Crops and a have organised a hands on DNA extraction activity for children and adults. Both adults and children fascinated by the DNA extraction from a strawberry. This activity aimed to better inform public about DNA, genetics and gene technology. About 95 per cent of Australian cotton is genetically modified for insect resistant and herbicide tolerance.

University of Western Australia

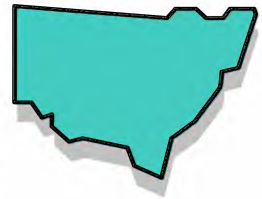
Helen Spafford has headed overseas to take up a position with the University of Hawaii. Helen will be missed.

Modika PERERA
WA Regional Councillor



Perth High School Student – Sarah Flores-Vargas is fascinated by the DNA extracted from a Strawberry.

NEW SOUTH WALES



Orange Agricultural Institute

With the change of name from Primary Industries to Industry & Investment NSW, comes a closer association with groups such as the NSW Game Council, Tourism Authority and similar groups under a mega department which will have its Head Office in Orange - which is a relief for the city.

Danuta Knihinicki has agreed to take on the subject editor for Eriophyoidea responsibilities for the journal Zootaxa. She is hoping that this will not be too taxing considering that she is still working only three days per week.

Murray Fletcher and **Peter Gillespie** attended the society's conference in Darwin and the Council of Heads of Australian Entomological Collections meeting on 24th. Peter also took the opportunity to examine material which has been on long term loan in the NT collections to see whether it can be returned home yet. This material includes primary types which were published some years ago as being in Orange but which have never been located there.

Murray followed the conference with a trip to China. Here he attended a workshop at the North West Agriculture and Forestry University on "Recent advances in leafhopper taxonomy"

attended by colleagues from China, India, the UK, the USA and Japan. On his way back to Australia, he also visited **Liang Ai-Ping** at the Chinese Academy of Science in Beijing.

University of New England

It has been a very busy past few months in the Insect Ecology lab at the University of New England. We have finally got our website up and running: http://www.une.edu.au/ers/research/insect-ecology-lab/. **Nigel Andrew** recently attended INTECOL, organising (and presenting in) a symposium on the Potential impacts of global climate change on terrestrial insects. He will also be attending the National Invertebrate Pest Initiative workshop organised by GRDC and CSIRO in Canberra (13th-14th October), and give an invited seminar at CSIRO Entomology, Black Mountain). Unfortunately he couldn't attend the Darwin meeting do to teaching commitments. **John Terblanche** (University of Stellenbosch, South Africa) will be visiting the lab in late October/November to continue collaborative research into insect strategies for adapting and coping with climate change. **Heloise Gibb** (La Trobe Uni) will also be visiting the lab in November.

Nereda Christian has started as an Associate Lecturer in Insect Ecology to initiate an extension and research project funded by the Grain Research and Development Corporation (GRDC): INTRODUCTION AND EXTENSION OF IPM IN NORTHERN NSW. This project aims to assist in the development and expansion of Integrated Pest Management strategies, including area-wide management, and expertise across the grain growing regions of northern NSW. To this end the project will develop an IPM research and communication strategy that will incorporate a pest insect identification service with the aim of improving knowledge in the area of invertebrate pest control and IPM in the northern NSW grain growing region. Nereda will be giving an introductory talk at the NIPI workshop in Canberra. This project is currently looking to employ a technician to assist with Insect Identification an extension work with Northern NSW farmers (closing date is early November). **Mohammad Khusro** started working on a scoping study funded by the Poultry CRC: Insects as poultry food (in collaboration with **Adrian Nicholas** from the Tamworth Agricultural Institute). This project will identify waste products being produced in the three major free-range chicken production areas, identify the potential of the waste product to be used as an insect food source, and hopefully initiate pilot studies on capacity of different insects to feed on waste products and the capacity of the insects to be reared using simple/ cost effective and productive methods. **Kerri Clarke** has been continuing sorting through samples of Acacia insects collected from around NSW. This project (Ecology of insect herbivore assemblages: influence of climate, evolutionary history and plant traits) is nearing completion (ARC funded 2007-2009) and data is slowly emerging from the masses of insect-infested vials that we have accumulated.

PhD student **Tom Mooney** is preparing to return to Macquarie Island for his second field season. He is assessing the response of soil invertebrates to hydrocarbon contaminated sub-Antarctic soil (in conjunction with the Australian Antarctic Division). Recently Tom gave a seminar on his research at the 13th Australasian Society for Ecotoxicology Conference in Adelaide. Matt **Binns** has been spending much of the last four months driving around Victoria and NSW assessing potential survey and transplant experiment sites for his PhD: Predicting the effect of climate change on community structure and function: an assessment using grassland invertebrates (Co-supervisors: **David Warton** UNSW and **Heloise Gibb** LaTrobe, ARC funded 2009-2011). We are developing predictive models to describe how grassland invertebrate community structure relates to climate. This will be based on field assessments over a large climatic gradient, the community structure will be characterised by species composition and insect morphological traits. The results of the survey will be compared to a transplant experiment where the predictions for invertebrate community structure are tested by moving existing grassland hosts to new climatic conditions to simulate climate change scenarios. **Chanthy Pol** has been rearing Green Vegetable Bugs (*Nezara viridula*)and *Tricopoda* sp. for the last few months for his PhD project assessing IPM strategies for the control of green

vegetable bug (GVB) in soybean: The potential influence of climate change on GVB and its parasitoids (Co-supervised by **Robin Gunning** – Tamworth Agricultural Institute and Bob Martin – Primary Industries Innovation Centre: funded by the Australian Centre for International Agricultural Research ACIAR). He has started his experimental work assessing the population variability of reared at different temperature and humidity regimes. Chanthy will be visiting Canberra 12th – 16th October for the Annual ACIAR postgraduate workshop. **Chris Fyfe** is also an associate with the Insect Ecology Lab. She is six month into her PhD assessing the Effect of tree plantings on nematode communities in pastoral farming systems. **Perrin Digby**, an honours student in the lab is preparing to start fieldwork on her Honours project: Comparison of insect succession on pig carcasses in pasture and native forest habitats on the New England Tablelands, NSW. **Michelle Yates**, an alumni member of the lab recently gave her first conference presentation at the Darwin meeting on one aspect of her Honours project: Ant assemblage structures: patterns in remnant and pasture habitats along an environmental gradient.

University of Sydney

Faculty of Agriculture, Food and Natural Resources

Sarah Mansfield attended the Darwin 200 meeting where she was one of the judges of student presentations and gave a poster on "*Production and testing of novel formulations of entomopathogenic fungi*". Continuing the entomopathogen theme, **Pampapathy Gurulingappa** (Biological Sciences) also presented a poster on "Entomopathogenic fungi may colonise leaves of crop plants and insects". While in Darwin we caught up with many other NSW entomologists including **Ross Rickard** (AQIS), **Markus Riegler** (University of Western Sydney), **Dave Britton**, **Shane McEvey** and **Dan Bickel** (Australian Museum), to name but a few. Meanwhile the 36th Australian Mushroom Growers' Conference was held at the Gold Coast International in Surfer's Paradise, Qld from 30th September – 3rd October. This conference covered all aspects of mushroom farming from pest and disease management, health benefits from mushroom consumption, the impact of new industrial relations legislation, to the future economic outlook and carbon foot print of the industry. Post doctoral fellow, **Afsheen Shamshad** presented the results of her work on, 'managing vector transmitted diseases in cultivated mushrooms'. Senior research fellow, **Alan Clift** and Shamshad jointly presented posters on, '*Verticillium fungicola* vectored by phorid, *Megaselia halterata*' and '*Siteroptes mesembrinae* (red pepper mite) and aggressiveness of three *Trichoderma* species'.

NSW DPI, Elizabeth Macarthur Agricultural Institute

During August **Grant Herron** participated in the recent Cotton Research and Development Corporation sponsored Insecticide Resistance Tour giving grower talks on his research in cotton in several locations around eastern Australia. Grant was interviewed during the tour by Rob Eveliegh from Cotton Seed Distributors and the resulting web interview scored the highest number of site hits for the month. Grant attended the ninth International Symposium on Thysanoptera and Tospoviruses. 31st August – 4th September 2009 presenting a paper on insecticide resistance in onion thrips.

NSW DPI, Gosford Primary Industries Institute

Anna Rathe, an ex-patriot of New Zealand, has joined **Leigh Pilkington** at NSW DPI, Gosford Primary Industries Institute, and **Geoff Gurr**, Charles Sturt University, Orange, for a three year PhD project. Her project will assess the risk and mitigate the impact of any possible incursion in Australia by the glassy-winged sharpshooter, *Homalodisca vitripennis*, and a pathogen associated with the insect, *Xylella fastidiosa*. Anna will spend some time in California assessing Australian native plants as hosts for the insect and determining which Australian native plants may act as reservoirs for the disease or may show symptoms. The project is funded by the National CRC for Plant Biosecurity and she has already won some competitive grants from the EH Graham Centre for top-up and travel funds.

University of New South Wales

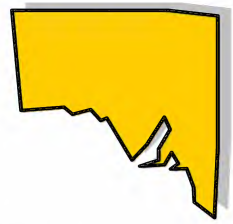
School of Biological, Earth and Environmental Sciences

Over the past month, all staff and students from the Cassis' lab at UNSW reported steady

progress. **Nik Tatarnic** was awarded best PhD in biological sciences at University of Sydney for his work on the systematics and sexual selection in the plant bug genus *Coridromius*. Nik and **Gerry Cassis** (with **Geoff Monteith** of the Queensland Museum) successfully returned from their field trip to tropical Queensland and the Northern Territory, sampling extensively in and around Borroloola. Numerous new land bug species were found including target taxa for the historical biogeography project of Australia. **Celia Symonds** and **Fiona Powell** returned from Lord Howe Island, surviving severe storms, but successfully completing further sampling of invertebrates in relation to the impact of alien rodents. Celia went on to undertake fieldwork at the Charles Darwin Reserve in WA, co-funded by ABRS and Earthwatch – about 40 species of land bugs were collected in less than a week, including specimens of the infamous 'arrow-headed bug'. **Jen Sinclair** has successfully extracted DNA from the gumtree bug genus *Amorbus*, for a project concerning phylogeny of the species, currently being undertaken by **Martin Steinbauer** (Latrobe University) and **Gerry Cassis**. **Geoff Thompson** is returning to the QM after a very productive stint at UNSW, illustrating numerous new species of seed bugs belonging to the Rhyparochromidae.

Murray FLETCHER/Sarah MANSFIELD
NSW Regional Councillors

SOUTH AUSTRALIA



University of Adelaide

A large contingent from Adelaide University attended the Darwin 200: Evolution & Biodiversity Conference in Darwin – **Andy Austin, Tessa Bradford, Michelle Guzik**, **John Jennings**, **Kate Muirhead**, **Kate Sparks**, and **Gary Taylor**. Also joining them were **Steve Cooper**, **Rachael King, Remko Leijs** and **Mark Stevens**, (SA Museum).

Also in early October **Kym Abrams** travelled to Tokyo to attend the Crustacea Society Summer Meeting where she presented a paper on the systematics and phylogeography of Parabathynellids.

John Jennings was re-elected as Chairman of the Council of Heads of Australian Entomological Collections (CHAEC) at their 20th AGM held in Darwin prior to the AES Conference. John has also been representing CHAEC on the Collections Data Management group within the Atlas of Living Australia.

Nick Murphy, a postdoc in the Evolutionary Biology and Biodiversity Group working on the phylogeography of mound springs invertebrates in the Great Artesian Basin, will be leaving shortly to take up a Lecturing position at La Trobe University. We wish him well in his new venture.

The *Natural History of the Riverland and Murraylands*, edited by **John Jennings**, has gone to the printers and will be launched in early November. It is the latest in the series of Natural History publications published by the Royal Society of South Australia. Contact John for further information.

School of Agriculture, Food and Wine

Kerry Davies and **Mike Hodda** (ANIC, CSIRO) will be teaching another of their short courses on plant and soil nematodes, from 2nd to 6th October. It will be held at ANU. They have 10 participants. They will discuss nematode morphology, morphometrics and identification; physiology and survival strategies; and host/nematode interactions.

South Australian Museum

Archie McArthur spent June in European museums searching for *Camponotus* (Colobopsis) types from the Pacific area. He was greatly assisted by **Sue Ryder** in London, **Herbert Zettel** and **Dominique Zimmerman** in Vienna, **Johannes Schuberth** in Munich, **Frank Koch** and **Hannelore Landsgerg** in Berlin, **Giulio Cuccodoro** in Geneva and in particular **Manfred Verhaagh** in Karlsruhe for providing photographs and giving him clues for finding Menozzi's types in the Faculta di Agraria, University of Bologna.

The University of South Australia

Mosquito and Plant Research Group - Sansom Institute, UniSA

On September 21st, the entire lower ground level of UniSA's Reid building on Frome Rd, Adelaide was flooded by about 9ft of storm

water. The force and volume of the flood destroyed almost everything on that level, including the laboratory run by **Craig Williams** and **Mike Kokkinn**. This lab was home to eight staff and students, along with an insectary. The lab is currently re-located in temporary office space and staff/researchers will attempt to re-build the research program over the coming months. Some of the field programs will continue to operate because of the generosity of other groups who have loaned equipment and important literature. Mike Lindsay and Sue Harrington (WA Health), Peter Whelan (NT Health) and Richard Russell (U Sydney and ICPMR Westmead) have been particularly generous and rapid with assistance. Staff have been brilliant in sorting through muddy and water-damaged papers and equipment in a bid to recover nearly 20 years of work in that lab.

The University of South Australia's "Bring Us your Bugs" event was held at the SA Museum on the 7th October. The day was a success, where they gave away almost 700 show bags, to those who brought in insects. The SA museum scientists provided their time and expertise, as did all those people who put on the shop front displays (DEH, NRM, SARDI, GEM-UniSA, Butterfly conservation group and Beekeepers soc), Burt's Bees, SA Museum and UniSA for providing prizes and showbags, the students from UniSA's masters course "Wildlife in Cities" and those from the undergraduate course "Science Communication", the team from GEM and the Barbara Hardy Centre, the ABC and of course the photographers. Over 40 people contributed with six separate displays and interactive events beside the bug donation tent.

SARDI Entomology Unit

Richard Glatz and **Kelly Bailey** attended the CRC National Plant Biosecurity (CRCNPB) science exchange, in Maroochydore, Qld from 22-24 September. In combination with project leader, **Sylwek Chyb** (CSIRO Entomology, Black Mountain), they presented a poster and talk about their project, "Biosensor-based detection of grain pests". The project received a CRCNPB award for innovation.

Joanne Kent, **Glenys Wood** and **Helen DeGraaf** attended the combined conference for the Australian Entomological Society's 40th AGM/ Society of Australian Systematic Biologists/ 9th Invertebrate Biodiversity & Conservation in Darwin, Sept 25th - 28th. Jo presented a poster about the tramp ant surveillance programme in SA. Glenys and Helen presented a poster on the revegetation project, regarding parasitism of Rutherglen bug (*Nysius vinitor*) by a native parasitoid (*Telenomus* sp.). Glenys also attended the Charles Darwin Symposium, 22nd -24th September.

Glenys and Helen also conducted an interactive display of crop pests and natural enemies at the "Bring us your Bugs" event.

And **Gitta Siekmann** is surveying South Australia for *Epiphyas postvittana*, light brown apple moth (LBAM). While there is good understanding about the biology and ecology of LBAM we know little about their distribution in non crop habitats. During the first week of the

Helen DeGraaf, Archie McArthur and Glenys Wood at the SARDI display at UniSA's "Bring us your Bugs" day

survey in the Southern Flinders Ranges, despite gale force winds (the same ones that blew into Sydney), she still managed to find some specimens. But don't worry, we (**Cate Paull** and **Ken Henry**), have attached a "find me spot GPS" to her so at least we know where she was blown to.

Ken Henry, **Greg Baker**, **Judy Bellati** and **Kym Perry** will be attending the Annual NIPI (National Invertebrate Pest Initiative) 5th Workshop at CSIRO Entomology, Black Mountain Canberra, 14th – 15th October.

Joanne KENT
SA Regional Councillor

NEWS FROM AFFILIATED SOCIETIES

Entomological Society of Queensland

The Perkins Memorial Lecture was held on Monday August 10 and Professor Gerry Cassis (UNSW) spoke on 'The Planetary Biodiversity Inventory and Documenting Australia's True Bugs (Heteroptera)'.

This biennial lecture celebrates the memory of Frederick Athol Perkins, a founder of the Entomological Society of Queensland, first lecturer in entomology at the University of Queensland (1926), and first Head of the Department of Entomology (1952). Athol Perkins influenced entomology in Queensland for half a century in a way that no other entomologist has yet emulated.

The 16th BugCatch was well attended with many members, visitors from the Butterfly and other Invertebrates club, and over 20 students from the Univ. of Queensland meeting at the Alperton Rd Visitor Centre in the Brisbane Koala Bushlands on 12th September 2009. The Stockyard Creek walking track gave good access to permanent freshwater, riparian habitat, spotted and scribbly gum, Casuarina stands, and some stringybark and ironbark. Malaise traps and baited pitfall traps were set up beforehand. Sweep netting, beating, bark spraying, and hand searching were used from 10am during the day, and light sheets set up at dusk.

The 2009 General Meetings are held at 12pm in the conference Room, CSIRO Long Pocket, 120 Meiers Rd Indooroopilly and include:

- Monday October 12: Myron Zalucki: UQ
- Monday November 9: Chris Burwell: QM
- Monday December 14: Notes & Exhibit + 5pm meeting followed by Christmas BBQ

Visitors Welcome.
See all the latest news on our website:
http://www.esq.org.au/

Noel STARICK
Representative Councillor

THE POSTGRAD PATCH

Am I the only post-grad in this lonely, lonely world?

For all those post-grads beavering away furiously in your own little world, you may feel isolated at times, but rest assured you are not alone. I would like to welcome you to a new section in Myrmecia – The Grad Patch. Throughout my years as a PhD Scholar (4 now), I have made a few notes based on my, and my fellow JCU PhD Scholars' experiences. Take some comfort in knowing that these issues are very normal and that at the end (yes, there is light!) you may emerge and wonder what all the fuss was about (HA – joke – those scars are worth it!). I also welcome any input/ feedback/ refutes/ additional fodder you may have on the

issues I will discuss. So here goes with contribution number 1.

Data collection issues:

Molecular work goes awry. Just about every project nowadays involves some type of genetic analysis, so these problems are very common. If only you knew then what you know now! You plug on and on and on…a year goes by…nada…still no luck with extracting/ cloning/ PCR'ing/ moon-walking (actually I think this is called primer walking). Or, unbeknownst to you because you are busy banging your head against the thermal cycler, the lab is fast becoming dysfunctional around you. You are told the only way it will become functional again is if YOU go out and get funding to employ a lab manager! Thou eminent professor must have forgotten the deed we both signed before I began, that stated all equipment will be provided by the school, and fully functional whilst I do my VIR (very important research). Wishful thinking!

Field work goes awry. You get into the field (maybe hundreds of kilometres from the lab) and discover that your carefully planned experimental design is not going to work! A lack of experience can lead to this occurring, especially if your study sites are in a place where no researcher has studied before. Alternatively, this can be caused by forces of nature completely out of your control, which is what happened to my mate. A cyclone absolutely destroyed his study site two years into his sampling. Quick change of thesis focus for him! This can also happen when you venture too far from civilisation, to a place where 'Island Time' rules. You pray to the field work gods that you will first reach your sampling site that same day and in one piece, second, the head honcho at that site will be around and say, 'oh yes, we would love for you to conduct your study on our little island and let me help you!', and third, maybe even find some bugs. But really, you feel very blessed when the alarm clock works, and wakes you up at 4.30am in time to eat dry weet-bix for brekkie.

Rearing work goes awry. Insects are pesky things really, as much as they are cute. Despite everyone already having done every mean thing they can do to insects, the project you choose kicks up some serious challenges. Just because aphids like living on pieces of clover leaf stuck into agar in a CT cabinet, doesn't mean that planthoppers will too. But that took six months of your precious time to figure out.

Solution: I don't know if there is a solution to these problems. Despite your careful preparation, you are not a mind-reader, nor can you see into the future to predict what the ultimate primer sequence will be or when a natural catastrophe will strike. If you are in the field, your best bet is to call your supervisor and draw up a new plan. If your phone doesn't work, think on your feet and try to remember Experimental Design 101! And prioritise – think about what is going to earn you a better publication and concentrate your time on that (unless you don't have a choice). Otherwise, talk to as many people as you can to suss out why things went wrong (sometimes, as in the cyclone case, reasons for failure are blindingly obvious). Then tag the failure a learning experience, outsource the genetics next time if you can (AGRF do great genetics!), and move on.

That's all for now! Next issue I would like to discuss either the cash, supervisor or motivation issue. I'm tending toward the supervisor issue – it's a goodie! Stay tuned.

Kylie L. ANDERSON

ENTOMOLOGY IN THE NEWS

Getting plants to rid themselves of pesticide residues

http://www.sciencedaily.com/releases/2009/09/090930112144.htm

ScienceDaily (Sep. 15, 2009) — Scientists in China are reporting the "intriguing" discovery that a natural plant hormone, applied to crops, can help plants eliminate residues of certain pesticides.

Jing Quan Yu and colleagues note that pesticides are essential for sustaining food production for the world's growing population. Farmers worldwide use about 2.5 million tons of pesticides each year. Scientists have been seeking new ways of minimizing pesticide residues that remain in food crops after harvest — with little success. Previous research suggested that plant hormones called brassinosteroids (BRs) might be an answer to the problem.

The scientists treated cucumber plants with one type of BR then treated the plants with various pesticides, including chloropyrifos (CPF), a broad-spectrum commercial insecticide. BR significantly reduced their toxicity and residues in the plants, they say. BRs may be "promising, environmentally friendly, natural substances suitable for wide application to reduce the risks of human and environmental exposure to pesticides," the scientists note. The substances do not appear to be harmful to people or other animals, they add.

Biologists discover "death stench" is a universal ancient warning signal

http://www.sciencedaily.com/releases/2009/09/090911133656.htm

The smell of recent death or injury that repels living relatives of insects has been identified as a truly ancient signal that functions to avoid disease or predators, biologists have discovered.

David Rollo at McMaster University found that corpses of animals, from insects to crustaceans, all emit the same death stench produced by a blend of specific fatty acids.

The findings have been published in the journal Evolutionary Biology.

Rollo and his team made the discovery while they were studying the social behaviour of cockroaches. When a cockroach finds a good place to live, it marks the site with a pheromone that attracts others. In trying to identify the precise chemicals involved, Rollo extracted juices from dead cockroaches.

"It was amazing to find that the cockroaches avoided places treated with these extracts like the plague," says Rollo.

The team eventually identified the specific chemicals that signalled death. Furthermore, they found that the same fatty acids not only signalled death in ants, caterpillars, and cockroaches, they were equally effective in terrestrial woodlice and pill bugs (crustaceans).

Because insects and crustaceans diverged more than 400-million years ago it is likely that most subsequent species recognize their dead in a similar way, that the origin of such signals was likely even older, and that such behaviour initially occurred in aquatic environments (few crustaceans are terrestrial).

"Recognizing and avoiding the dead could reduce the chances of catching the disease, or allow you to get away with just enough exposure to activate your immunity," says Rollo. Likewise, he adds, release of fatty acids from dismembered body parts could provide a strong warning that a nasty predator was nearby.

"As explained in our study, fatty acids—oleic or linoleic acids—are reliably and quickly released from the cells following death. Evolution appears to have favoured such clues because they were reliably associated with demise, and avoiding contagion and predation are rather critical to survival."

The generality and strength of the phenomenon, coupled with the fact that the fatty acids are essential nutrients rather than pesticides, holds real promise for applications such as plant and stored product protection or exclusion of household pests.

http://www.mcmaster.ca/opr/html/opr/media/main/NewsReleases/Deathstudy.htm

INTERESTING WEBSITES

If you are aware of useful websites out there, please share.

ISPI *International Society for Pest Information*

Find information relevant to the field of pest management, including scientific literature and addresses of scientists, institutes, companies and organizations on this site.

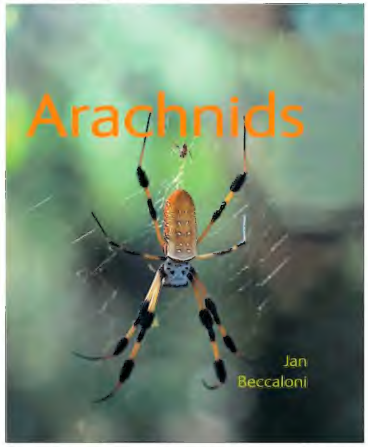
The site also has a searchable list of literature relevant to the management of thrips and grasshoppers.

http://www.pestinfo.org/default.htm

THYSANOPTERA (THRIPS) OF THE WORLD – A CHECK LIST

Laurence Mound launched the 'Thrips of the World' at the Thrips and Tospovirus conference at Sea World. The site is a work in progress and is being developed to include identification keys to Australian Thysanoptera. Users will also be ability to link to similar Lucid keys from other parts of the world. The site includes a checklist and a range of thrips information.
http://www.ento.csiro.au/thysanoptera/worldthrips.html

BOOK REVIEW



Arachnids by Jan Beccaloni, Published in Australia by CSIRO Publishing, ISBN 978 0 643 09697 4. 320 pp. RRP $69.95

Arachnids constitute one of the most abundant and diverse groups of living organisms, populating virtually all terrestrial environments but also inhabiting freshwater and marine ecosystems. Amongst the extreme locations that arachnids can be found include marine mites at the bottom of the Mariana Trench and follicle mites on our own faces. Try informing your friends and colleagues of the latter fact and watch them start idly scratching their eyebrows!

General books on arachnids have been few and far between. In my view the most comprehensive treatments included the chelicerate sections in the French encyclopaedic series Traité de Zoologie, and various compendia written by the great German arachnologist Alfred Kästner. The most long-lasting and influential books in the English language was Theodore Savory's The Arachnida, first published in 1935 with later editions in 1964 and 1977. These books suffered in completeness and included some out-of-date information but they adequately served several generations of biologists seeking general information on arachnids. Since that time there has been a dearth of published works apart from special chapters on arachnids in compendia.

Jan Beccaloni's book Arachnids serves to fill that gap. The book is divided into 12 chapters, consisting of an introduction and 11 chapters for each individual order. The introductory chapter is titled "Spiders aren't the only arachnids", more than adequately dealing with a common misconception that spiders represent the entire class Arachnida. The chapter also covers fossil arachnids, external and internal anatomy, and some ecological traits such as behaviour and life history. General aspects of their anatomy and biology are summarized and competing hypotheses on chelicerate orders are depicted and very briefly discussed.

Each of the subsequent chapters has similar layouts with sections on classification and diversity, anatomy, distribution, general biology and behaviour, life history. I found the sections on classification to be somewhat short on detail, and some chapters failed to adequately discuss internal classifications. Perhaps I think too much like a systematist but this book would have been an ideal place to outline the fundamental classification of each arachnid order and highlight discrepancies between competing systems. The vexatious issue of mite classification – with acarologists recognizing as many as seven orders or only a single order – is briefly discussed. Despite the prevalence for acarologists to recognize multiple orders (e.g. the recently published third edition of the Manual of Acarology by Jerry Krantz, David Walter and their co-workers), Jan Beccaloni sensibly treats them in one chapter.

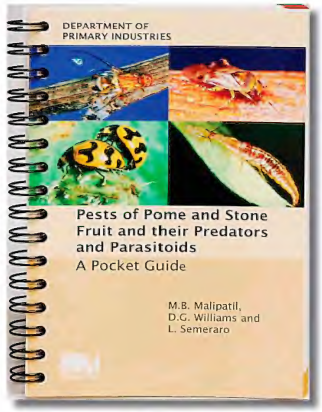
Numerous photographs are provided for each chapter amply demonstrating the diversity and beauty of arachnids. Simplified line illustrations

depict anatomical structures which are in turn discussed in detail in the text. The one-page glossary and an index round off the book.

The volume is beautifully produced with a nice format, font, graphics and paper quality. I encourage all biologists to obtain a copy of Arachnids to learn more about these fascinating ancient creatures.

Mark HARVEY
Western Australian Museum, Perth

NEW PUBLICATIONS



Pests of Pome and Stone Fruit and their Predators and Parasitoids, A Pocket Guide. By M.B. Malipatil, D.G. Williams and L. Semeraro. Revised Edition. RRP $30 plus postage.

When it was first published in 1996, 'Pests of Pome and Stone Fruit and their Predators and Parasitoids - a pocket guide' was quickly taken up by the fruit industry and its associated service industries. It has since inspired production of similar publications in other countries and in other industries within Australia. The guide is an important resource for training fruit industry staff, consultants and chemical resellers in integrated pest management.

The revised and updated resource guide aims to help the pome and stone fruit grower, home gardener, IPM consultant, field worker, student and researcher with identification of major pest and beneficial insects and mites found in orchards in Australia.

All growers of deciduous fruit, including home gardeners, should have a copy. Students, pest management consultants, extension staff and researchers will also find it invaluable.

This guide is designed to fit in a shirt pocket and to withstand the usual rough treatment by field based workers.

For more information or to order a copy of the guide visit www.dpi.vic.gov.au or call (03) 9210 9356.

COMING EVENTS

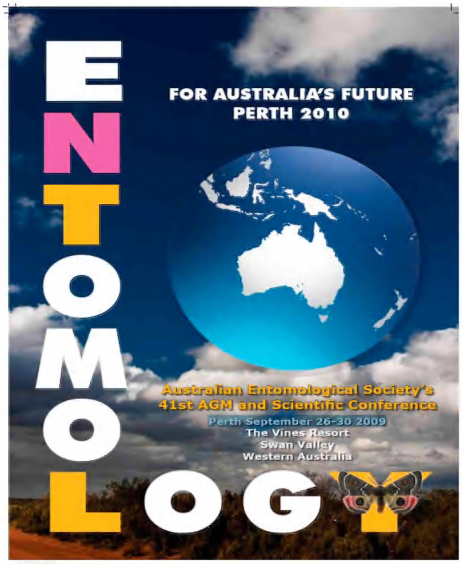
2009

Entomological Society of America Annual Meeting
13-17 December 2009
Indianapolis, USA

The Annual Meeting of the Entomological Society of America is its premier event each year. For a four-day period, thousands of entomologists and professionals from related disciplines gather from around the world to exchange scientific information and ideas, enhance professional knowledge and skills, network with colleagues and re-acquaint with old friends, and conduct the business of the Society.
Contact: ESA, 9301 Annapolis Rd., Lanham, MD 20706-3115, USA.

Email: meet@entsoc.org.
Conference Website: www.entsoc.org.

2010



Australian Entomological Society's 41st AGM & Scientific Conference

Entomology for Australia's Future

September 26-30 2009

Perth, WA

Like to drink wine and converse about insects? Next year we are giving members a chance to do both when they visit Perth for the Australian Entomological Society's 41st AGM & Scientific Conference. The conference will be held in September at the Vines Resort in the Swan Valley.

Global Biosecurity 2010
safeguarding agriculture and the environment
28 February – 3 March 2010
Brisbane Convention and Exhibition Centre
For further information: Conference Solutions
e: biosecurity@con-sol.com
ph: +61 2 6285 3000
www.globalbiosecurity2010.com

Global Biosecurity 2010: safeguarding agriculture and the environment

28 February - 3 March 2010

Brisbane

The conference is progressing, with abstracts due by 31 July and a program being developed. While the abstracts for presentations and posters are rolling in, you have the opportunity to make substantial savings on the cost of conference registration.

Details of the pre-program registration savings are now available at http://www.globalbiosecurity2010.com/registration.html

8th International Symposium on Fruit Flies of Economic Importance

12-17 September 2010

Valencia, SPAIN

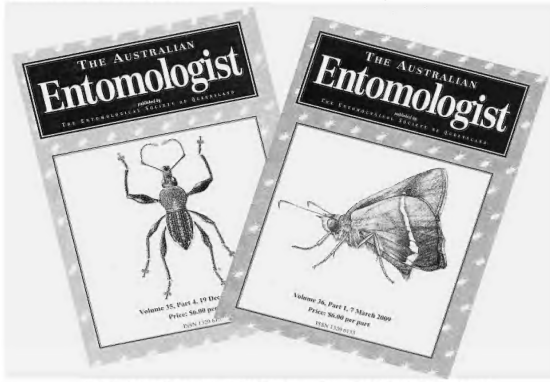
The meeting is organized by the Instituto Valenciano de Investigaciones Agrarias and the TRAGSA-Medfly SIT Program in Valencia. The meeting will take place at the facilities of Valencia Conference Center (Palacio de Congresos). The purpose of the Symposium is to bring together academic, industry, research and action people from the all over the world to discuss the various aspects of fruit flies and recent developments related to Pest Management Strategies. The meeting will encourage cooperation between participants, contribute to spread new findings, promote their practical use and highlight research needs.
http://www.fruitflyvalencia2010.org.

12-16 December * ENTOMOLOGICAL SOCIETY OF AMERICA ANNUAL MEETING San Diego, CA, USA. Contact: ESA, 9301 Annapolis Rd., Lanham, MD 20706-3115, USA. Email meet@entsoc.org. Fax: 1-301-731-4538. http://www.entsoc.org.

NOTICES

THE AUSTRALIAN ENTOMOLOGIST

A quarterly, illustrated magazine of original research on insects of Australia and the southwest Pacific



AN INVITATION TO SUBSCRIBE

Commenced in Sydney by Max Moulds in 1974, the magazine is now published in Brisbane by the Entomological Society of Queensland and is recognised as one of the leading outlets for quality, refereed research on native insects in Australia. In particular, it publishes much of the new information on Australian butterflies with more than 200 papers since inception. Attractively presented on quality paper, it carries much colour work, while the cover features illustrations by Australia's top insect artists.

Annual subscription for individuals is $33 in Australia, $40 in Asia/Pacific and $45 elsewhere. To subscribe send name and address with cheque/money order (payable to *Australian Entomologist)*, to Business Manager, Box 537, Indooroopilly. Qld. 4068. To pay by credit card, send email request to *geoff.monteith@bigpond.com* and an email invoice will be sent to you, or use the subscription form at http://esq.org.au/entomologist.html Ask for a free inspection copy or enquire about our back issue sale at 75c/copy for years prior to 2004.

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